**Project Introduction**

This is a decentralized data transaction platform providing medium for the exchange of two types of products, raw data and API key for machine learning model. Dataset sellers can upload their data stored in IPFS to our platform and claim the selling price through our smart contract. There is an option for them to purchase machine learning service provided by our team. We hope to leverage our expertise to generate valuable insights based on sellers’ data. The machine learning models that we create will co-exist with the raw data provided by data sellers. It depends on buyers’ needs to choose either product that suits them more while sellers can also benefit from multiple product lines to generate increased sales amount. Our platform is powered by the usage of IPFS and smart contract which speeds up the transaction process and eliminates the need for us to maintain database. To promote the best data transaction environment, we will dedicate our efforts towards regulation. We have a two-stage development plan for the regulation, with due diligence validation in IPFS at first, followed by automatic data validation powered by in-house machine learning model.

The aim of our platform is to maximize the utilization of data across the globe which eventually facilitates the research and development process of new innovation. By resource reallocation, data sellers are able to generate revenue and data buyers are able to create innovation for the benefits of the society.

**Implementation Ideas**

We use Angular for the front-end development and Solidity for the smart contract.

In our smart contract, a unique id is stored for each incoming data hash and ML API Key. The id is used as the key of a mapping table to a struct which contains data information (data hash, dataset name, seller wallet address, dataset price, dataset description & buyers’ wallet address). This smart contract also contains two public view retrieval functions which are used for our front-end program to retrieve necessary data information for display of data products to our potential customers.

Our front-end program calls the retrieval function to get three arrays consisting of the dataset name, price and description for each data product. Each data product is shown accordingly in our website. For other sub-features, we also designed relevant public view functions in the smart contract for the front-end program to connect in real-time. All dataset buyers and sellers have to do is make use of our website interface to clickthrough the features that they would like to perform. We also established automatic connection with MetaMask Wallet whenever payable function is triggered.